18. Explain how the endogenous antigens are presented with class I MHC molecules in the cytosolic pathway.

19. Elucidate how the signal transduction pathways are activated by interaction of the TCR-CD3 complex.

20. Define the term anaphylaxis. Write about the different hypersensitive responses.

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Shanmuga Industries Arts & Science College
T.V.Malai

APRIL/MAY 2024

CBT41/FBT41/BBT41 — IMMUNOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is clonal anergy?

2. What is hybridoma? Give two examples on the clinical application of monoclonal antibodies.

3. Define the terms endogenous antigen and exogenous antigen.

4. What is antigen presenting cells? Name the three types of professional APCs.

5. What do you understand by immediate hypersensitivity and delayed type hypersensitivity?

6. How will you differentiate between TH and TC cells?

7. What is Freund's complete adjuvant and Freund's incomplete adjuvant?

8. Why is immunological tolerance critical to the normal functioning of the immune system?

9. What is erythroblastosis fetalis? Mention the causative factors of it.

10. What is hapten and hapten carrier conjugate?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What is immunity? Describe innate with suitable example.

Or

(b) How does MHC class I vary from MHC class II molecules? Give an Illustration of their general structure.

12. (a) What is the difference between immunogenicity and antigenicity? Mention the nature of immunogen which contributes to immunogenicity.

Or

(b) Describe the role of primary lymphoid organs thymus in immune response.

13. (a) Write a short note on toll like receptors (TLRs).

Or

(b) Briefly describe the three types of epitopes or antigenic determinants on immunoglobulin.

14. (a) Draw a schematic diagram of the interactions between the T_H-cell receptor and the peptide MHC complex on an antigen presenting cell.

Or

(b) What is autoimmunity and write brief introduction autoimmune diseases?

15. (a) What is Landsteiner's rule? Explain the genetic basis of ABO blood grouping in human population.

Or

(b) What type of clinical tests that can be performed to determine the ABO blood groups?

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SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe in detail B lymphocytes and T lymphocytes.

17. List the different antibody classes and describe the structure and biological activity of each class.